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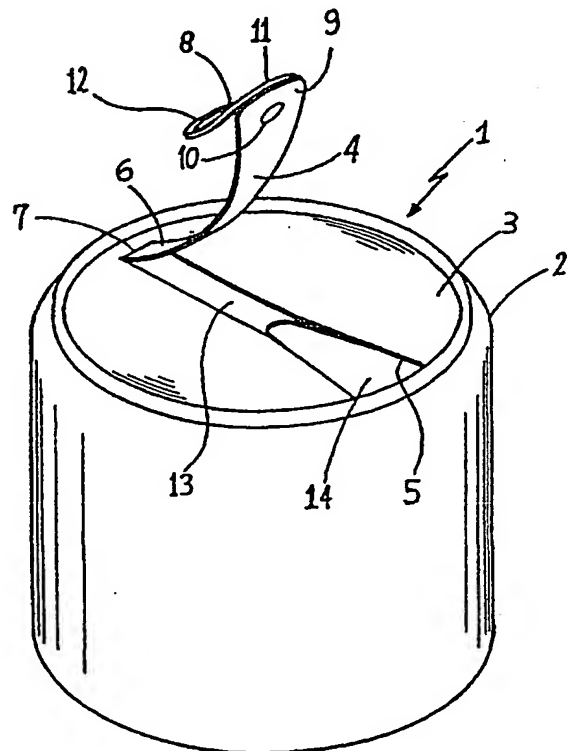
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(21) International Application Number: PCT/IT99/00015 (22) International Filing Date: 27 January 1999 (27.01.99) (71)(72) Applicant and Inventor: SIGNORELLI, Antonello [IT/IT]; Via Lesbia Cidonia, 4/A, I-20124 Bergamo (IT). (74) Agent: SALVADORI, Martino; Bugnion S.P.A., Viale Lancetti, 19, I-20158 Milano (IT).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>In English translation (filed in Italian).</i>

(54) Title: CLOSING DEVICE FOR BEVERAGE CONTAINERS AND THE LIKE

(57) Abstract

The closing device for cans and similar containers of beverages in general comprises a cover disk (3) hermetically fastened on the mouth of the container (2), an opening flap (4) pre-dinked diametrically from one edge to the other of the can on the cover disk (3), and an action ring (8) engaged on the opening flap. A plate shaped element (13) interposed between the cover disk (3) and the container presents an emptying opening (14) dimensioned according to a desired section for the passage of the liquid flowing out of the container (2). Upon opening the openable flap (4) is detached from the disk (3) along the pre-dinking (5), but remains fastened thereto by means of its own end (7). The detachment of the opening flap (4) frees the corresponding emptying opening (14) thereby allowing the outflow of the liquid content.



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Description

Closing Device for Beverage Containers and the like

Technical Field

The present invention relates to a closing device for beverage containers and the like comprising: a cover disk hermetically engageable to a mouth of a beverage container; at least a detachable flap pre-dinked on the cover disk and fastened by means
5 of one of its ends to the cover disk itself; at least an action ring engaged on the openable flap.

More in detail the invention is applicable to aluminium cans or similar cylindrical containers for beverages in general, even carbonated, as well as for liquid or fluid
10 products of other kinds.

Background Art

As is well known, the containers of the aforementioned type comprise a base body, obtained for instance by drawing, which generally presents a cylindrical shape open at the top.

15 A closure device is engaged rigidly and hermetically in correspondence with the top mouth of the container.

In a first known solution, the closure device essentially comprises a cover disk, hermetically engaged on the mouth of the container and having sufficient thickness to withstand the pressure acting inside the container itself, particularly when the latter is
20 filled with a carbonated beverage.

On the cover disk is fastened a detachable tab defined by a pre-dinking that develops along a closed line, to delimit on the disk itself, an emptying opening of appropriate dimensions and contour. The detachable tab presents two ends respectively located at the centre of the disk and in a peripheral area of the disk itself.

25 An action ring is fastened on the centre end of the detachable tab by means of a hermetically sealed hinging element. By acting manually on the action ring, the tab is easily removed causing its detachment from the cover disk along the pre-dinking line.

This solution presents a problem given by the dispersion of the tab in the surrounding environment.

In order to solve this problem, a second solution has been developed, essentially comprising a cover disk, an action ring and a dropping tab. In this case, the action ring
5 is engaged on the cover disk by means of a hermetically sealed hinging element and acts on the tab with an edge protruding slightly with respect to the hinging element.

The dropping tab, being preliminarily die cut according to an open line, is detached from the corresponding emptying opening, remaining engaged to the cover disk by means of a retaining portion.

10 This second solution solves the problem of the dispersal of the tab in the environment, but it generates a further set of problems given by the insertion of the dropping tab inside the container. The tab, exposed to impurities of all kinds, comes in contact with the contained liquid. The only way to confront this undesirable situation is thoroughly to clean the cover disk before opening the container. However, this
15 operation cannot always be performed in the appropriate way and at the opportune time.

Disclosure of Invention

The aim of the present invention is substantially that of solving the problems of the prior art, proposing a closing device that does not insert the tab inside the container
20 and that, at the same time, demonstrates its ability to maintain the tab fastened to the cover disk in such a way as not to hamper the user and cause injury hazards.

These aims and others besides, which will be made clearer in the course of the present description, are substantially attained by a closing device characterised in that it comprises a plate-shaped element interposed between the container and the cover disk
25 and comprising an emptying opening that faces at least partially the opening flap.

Further features and advantages shall become more readily apparent from the detailed description of a preferred, but not exclusive, embodiment of a closing device for containers of beverages in general, in accordance with the present invention.

The description shall be made below with reference to the accompanying
30 drawings, provided purely by way of non limiting indication.

Description of the Drawings

- Figure 1 shows a plan view of the subject device;
- Figure 2 shows a perspective view of the device in the opening phase and associated to a container;
- 5 - Figure 3 is a section of the device in closed condition performed according to trace III-III;
- Figure 4 shows a section of the device in the opening phase highlighting in dashed line the condition of total opening of the device itself.

10 Description of the Illustrative Embodiment

With reference to the aforementioned figures, the number 1 indicates in its entirety a closing device for beverage containers and the like, or of liquids and fluids of other kinds.

15 The illustrative embodiment shows, as a container, a can of a known, conventional type, indicated in its entirety with the number 2.

The closing device comprises a cover disk 3 hermetically engaged, for instance by means of seaming, to a mouth presented at the top by the container or can 2.

On the cover disk 3 is pre-dinked an opening flap 4, delimited by a pre-dinking line 5, preferably so shaped that the opening flap 4 extends diametrically between two
20 opposite edges of the cover disk 3. Said opening flap 4 is fastened in one of its ends to the cover disk 3. More in detail the opening flap 4 comprises a first end 6 which presents a fastening portion 7 permanently engaged to the cover disk 3. In the illustrative embodiment such fastening portion 7 is joined in a piece to the cover disk 3 in correspondence with a non pre-dinked area. In other words, the fastening portion
25 7 is obtained from an interruption in the development of the pre-dinked line 5 present on the cover disk 3.

An action ring 8 is engaged on the opening flap in correspondence with a second end 9 present on the flap itself, on the opposite side to the first end 6.

30 The action ring 8 is fastened to the opening flap 4 by means of a hermetically sealed hinging element 10, realised in a known, conventional manner. The action ring

8 presents a first edge 11 adjacent to the second end 9 of the opening flap 4 and a second edge 12 opposite to the first, wherefrom the can is opened.

In accordance with the present invention, the device 1 further comprises at least a plate shaped element 13 interposed between the container 2 and the cover disk 3. The
5 plate shaped element 13 can house a hermetically sealed hinging element (not provided in the illustrative embodiment), whose function is to fasten the opening flap 4 to the cover disk 3. In the presence of such hinging element the pre-dinking 5 can extend according to a closed line.

The plate form element 13 is positioned adjacently to the opening disk 3. In the
10 case shown on the drawings, the plate shaped element 13 presents a surface extension similar to that of the overlying cover disk 3 and it is seamed onto the mouth of the container 2 together with the cover disk itself.

Alternatively, the plate shaped element 13 can present a reduced surface development with respect to that of the cover disk 3, and be fastened directly thereto by
15 means at least of one hermetically sealed fastening element, realisable in a known, conventional manner, located inside the peripheral development of the cover disk itself. In addition to the attachment on the cover disk 3, any fastening system on the container 2 can be provided.

In any case, on the surface of the plate shaped element 13 is present an emptying
20 opening 14, which faces at least partially the opening flap 4.

Preferably the aforesaid opening 14 is located in correspondence with the second end 9 of the opening flap 4, i.e. the end bearing the action ring 8.

The emptying opening 14 presents, in the plane whereon the plate shaped element 13 lies, at least one reduced dimension with respect to the development of the opening
25 flap 4, in such a way as to provide a controlled section for the passage of the liquid flowing out of the container 2.

More in particular, in the illustrative embodiment, the emptying opening presents a similar configuration to that of the opening flap 4 in proximity to the second end 9, and a radial development suitably reduced with respect to that of the latter.

30 In this circumstance, nothing prevents the opening flap 4 from presenting

considerably greater width than the one that can be seen in the example shown, since the outflow section of the liquid is limited by the dimensions of the emptying opening 14.

Alternatively, the emptying opening 14 can present a greater width than that of the opening flap 4, provided it has a smaller radial dimension than that of the flap itself, thereby providing in any case the desired controlled passage section for the outflow of the liquid.

For purposes of opening the closure device 2, the action ring 8, manually actuated from the second edge 12, rotates around an axis parallel to the plane of the cover disk 3, and located in proximity to the hinging element 10. The action ring 8 acts with its own first edge 11 on the underlying second end 9 of the opening flap 4, thrusting it towards the interior of the container 1 and causing its tearing along the pre-dinking 5.

In a second phase the action ring 8, also manually, is pulled away from the cover disk 3. Since the action ring 8 is fastened to the opening flap 4, it drags it causing it to detach along the pre-dinking line 5. Once the detachment is complete, the opening flap 4 remains engaged to the cover disk 3 in a position suitably distanced from the emptying opening 14, as shown with dashed line in Figure 4.

Although the lifting of the flap 4 and its move away from the opening 14 have determined the removal of a relatively large part of the cover disk 3, the presence of the plate shaped element 13 with the emptying opening 14 prevents an excessive outflow of the content during the use of the can.

The present invention thereby attains its proposed aims.

The subject device solves the problems observed in the prior art, maintaining fastened the opening flap 4 to the cover disk 3 by means of a fastening portion 7, and at the same time avoiding the insertion of the opening flap 4 inside the container 1. It should be noted that this invention allows the user to employ the can with no danger of being disturbed or injured by the opening flap 4, since the latter assumes a position distanced from the emptying opening 14.

It should also be noted that this invention can be realised with relatively low costs, without impacting in a determining manner on the overall cost of the can or container

of other kinds whereto the device is associated.

Claims

1. Closing device for beverage containers and the like comprising:

- a cover disk (3) hermetically engageable to a mouth of a beverage container (2);
- at least an openable flap (4) pre-dinked on the cover disk (3) and fastened by means of one of its ends to the cover disk itself;

5 - at least an action ring (8) engaged on the openable flap,
characterised in that it comprises a plate shaped element (13) interposed between the container (2) and the cover disk (3), said plate shaped element (13) presenting an emptying opening (14) which faces at least partially the opening flap (4).

10 2. Device according to claim 1, characterised in that said openable flap (4) extends between two opposite edges of the cover disk (3).

3. Device according to claim 1, characterised in that said openable flap (4) presents an end (9) in correspondence with the emptying opening (14) of the plate shaped
15 element (13).

4. Device according to claim 1, characterised in that said openable flap (4) comprises an end (6) joined in a piece to the cover disk (4) in correspondence with a non pre-dinked area (7).
20

5. Device according to claim 1, characterised in that an end (6) of the openable flap is fastened on the disk (2) by means of a hermetically sealed hinging element.

6. Device according to claim 1, characterised in that said plate shaped element (13)
25 is adjacent to the cover disk (2).

7. Device according to claim 1, characterised in that said plate shaped element (13) is seamed onto the opening of said container (2).

8. Device according to claim 1, characterised in that said plate shaped element (13) is fastened to the cover disk (4) in at least one area distanced from a peripheral edge of the cover disk itself.
- 5 9. Device according to claim 1, characterised in that said emptying opening (14) presents at least one reduced dimension with respect to the development of the openable flap.

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FIG.1

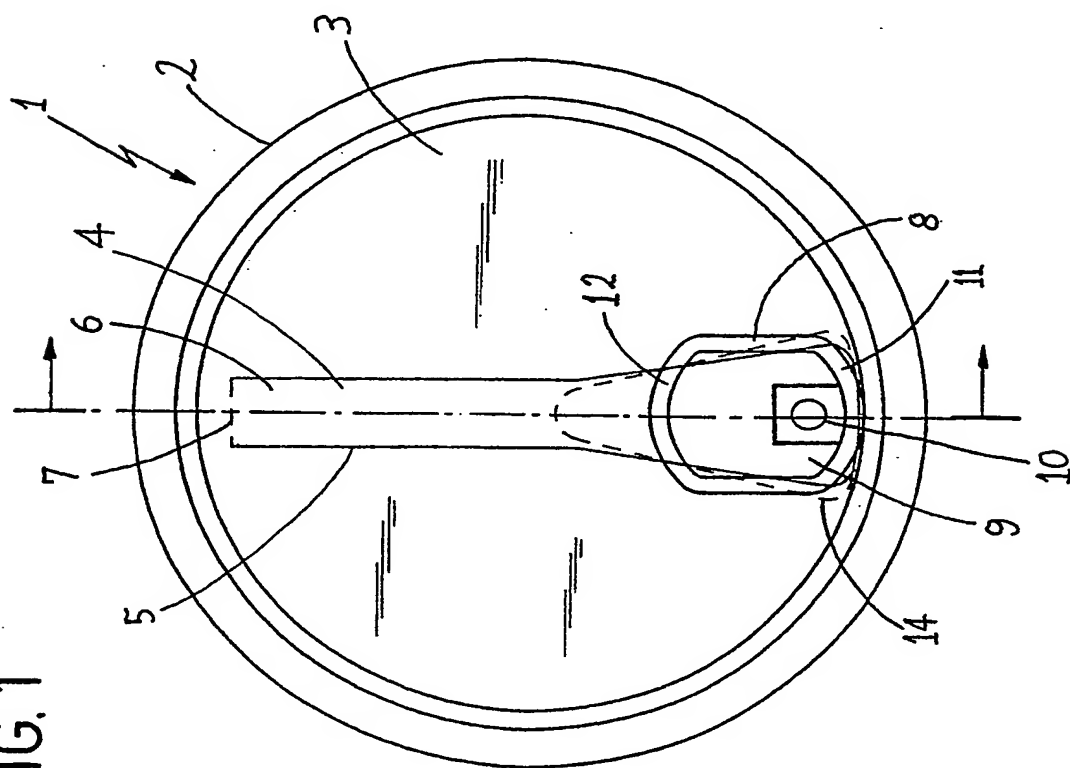
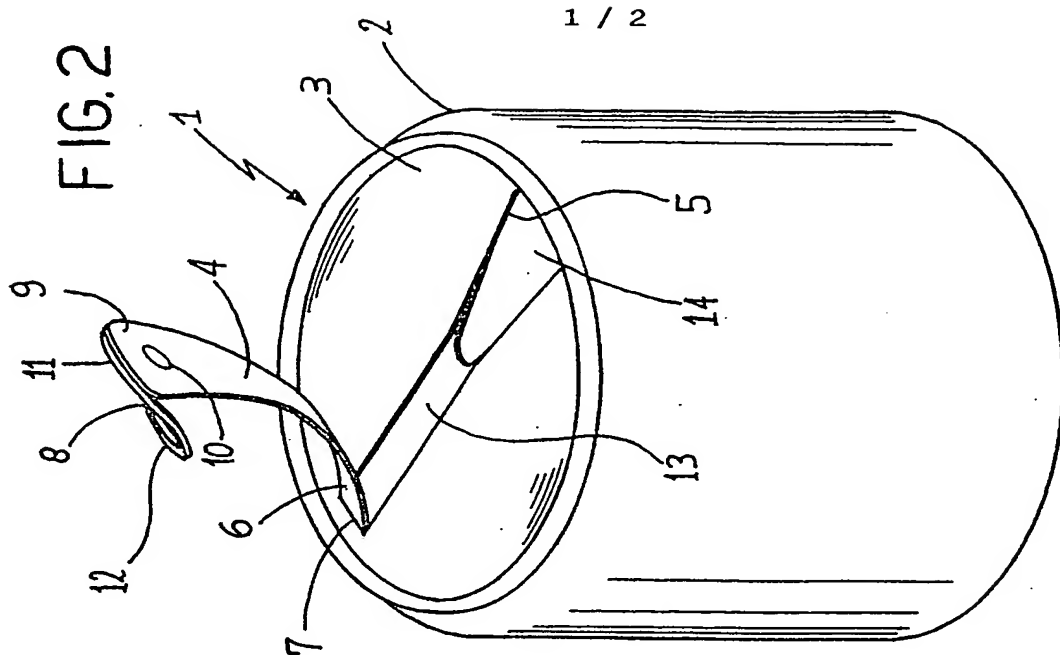


FIG.2



2 / 2

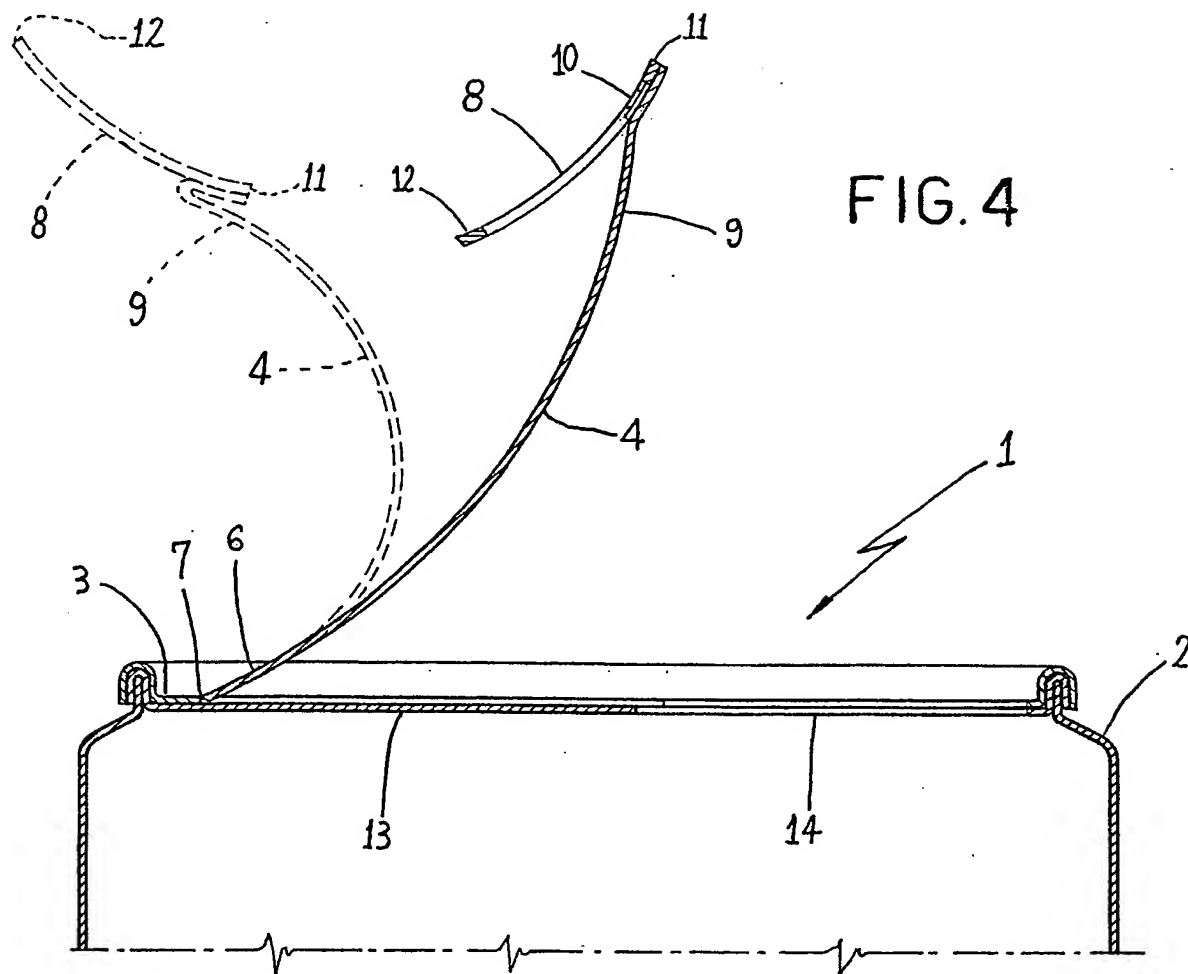


FIG. 4

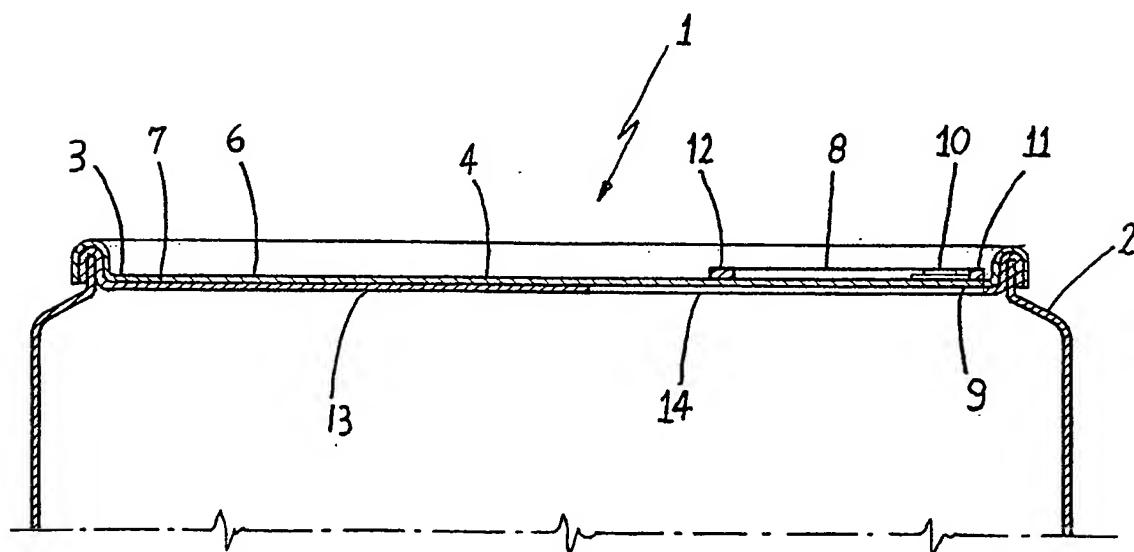


FIG. 3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IT 99/00015

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B65D17/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 424 338 A (KAZEL) 28 January 1969 (1969-01-28) column 2, last paragraph - column 3, paragraph 1; figures -----	1-3, 6, 7, 9

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